

Riverside Drive and Heard's Ferry Road Comparison of Signal and Roundabout Conditions

**Prepared for:
City of Sandy Springs, GA**

January 2017

Photos

EASTBOUND HEARDS FERRY ROAD (PM PEAK)



**PM PEAK LOOKING
NORTHBOUND FROM
WB I-285 ROUNDABOUT**



Photos

WESTBOUND HEARDS FERRY ROAD (PM PEAK)



**PM PEAK LOOKING
SOUTHBOUND FROM
HEARDS FERRY ROAD**



A&R Engineering Inc.

Measure of Effectiveness (Signal) Level-of-Service (Delay in Seconds) Existing (2016)

Intersection	AM Peak	MID Peak	PM Peak
Riverside Drive/Heards Ferry Road (Overall)	E (63)	D (48)	D (55)
-Eastbound Approach	F (111)	E (67)	F (82)
-Westbound Approach	F (124)	F (87)	F (110)
-Northbound Approach	C (33)	D (38)	D (48)
-Southbound Approach	D (41)	C (31)	C (33)

AM Peak Hour: 7:30 am - 8:30 am

MID Peak Hour: 3:00 pm - 4:00 pm

PM Peak Hour: 4:00 pm - 5:00 pm

**Traffic counts conducted
on December 6, 2016**

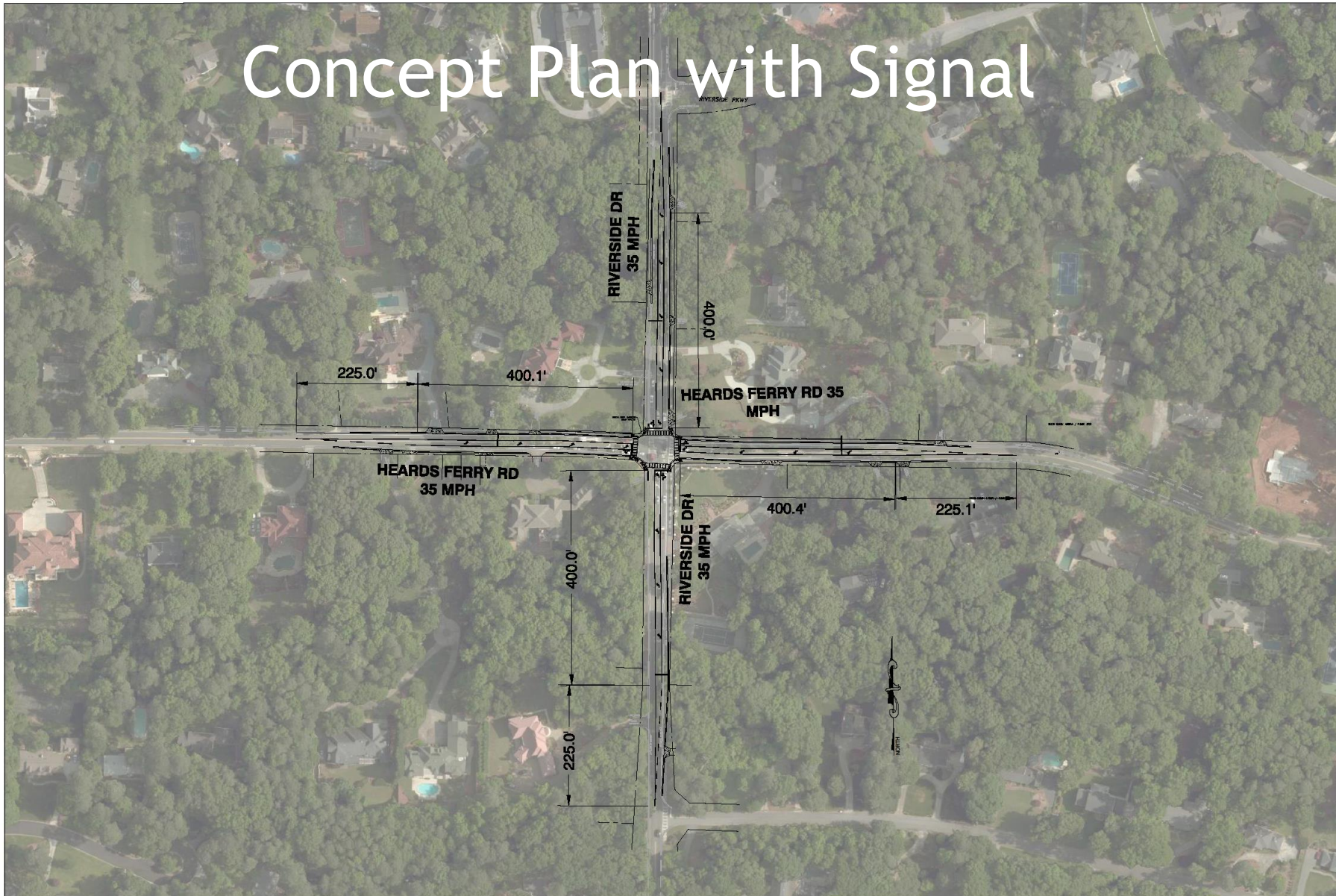
Measure of Effectiveness (Signal)

Queue Lengths (feet)

Existing (2016)

Intersection	AM Peak	MID Peak	PM Peak	Available Storage	Recommended Storage
Riverside Drive at Heards Ferry Road					
-Eastbound Left	225	177	191	65	230
-Eastbound Through/Right	569	292	299	-	
-Westbound Left	176	186	191	80	200
-Westbound Through/Right	587	709	508	-	
-Northbound Left	196	61	244	125	250
-Northbound Through/Right	317	550	1,746	-	
-Southbound Left	99	157	127	125	160
-Southbound Through/Right	1,119	515	510	-	

Concept Plan with Signal



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Measure of Effectiveness (Signal) Level-of-Service (Delay in Seconds) Future (2020)

Intersection	AM Peak	MID Peak	PM Peak
Riverside Drive/Heards Ferry Road (Overall)	F (96)	E (60)	E (72)
-Eastbound Approach	F (151)	E (76)	F (105)
-Westbound Approach	F (160)	F (105)	F (145)
-Northbound Approach	E (61)	D (53)	E (67)
-Southbound Approach	E (74)	D (39)	D (39)

AM Peak Hour: 7:30 am - 8:30 am

MID Peak Hour: 3:00 pm - 4:00 pm

PM Peak Hour: 4:00 pm - 5:00 pm

Measure of Effectiveness (Signal)

Queue Lengths (feet)

Future (2016)

Intersection	AM Peak	MID Peak	PM Peak	Available Storage	Recommended Storage
Riverside Dr @ Heards Ferry Rd					
-Eastbound Left	229	220	251	65	250
-Eastbound Through/Right	1,147	316	205	-	
-Westbound Left	196	287	240	80	300
-Westbound Through/Right	884	629	1,194	-	
-Northbound Left	290	269	379	125	380
-Northbound Through/Right	368	833	2,584	-	
-Southbound Left	127	199	179	125	200
-Southbound Through/Right	1,971	646	738	-	

Signal Concept Estimated Costs

DEMOLITION	\$37,000
EROSION CONTROL	\$48,700
STORM DRAIN SYSTEM	\$43,840
CURB, BASE & PAVING	\$459,546
SIGNAL MODIFICATION	\$210,000
TRAFFIC CONTROL	\$30,000
<u>GENERAL</u>	<u>\$163,387</u>
TOTAL:	\$992,473*

* Excludes property acquisition, utility relocations and cost-to-cures

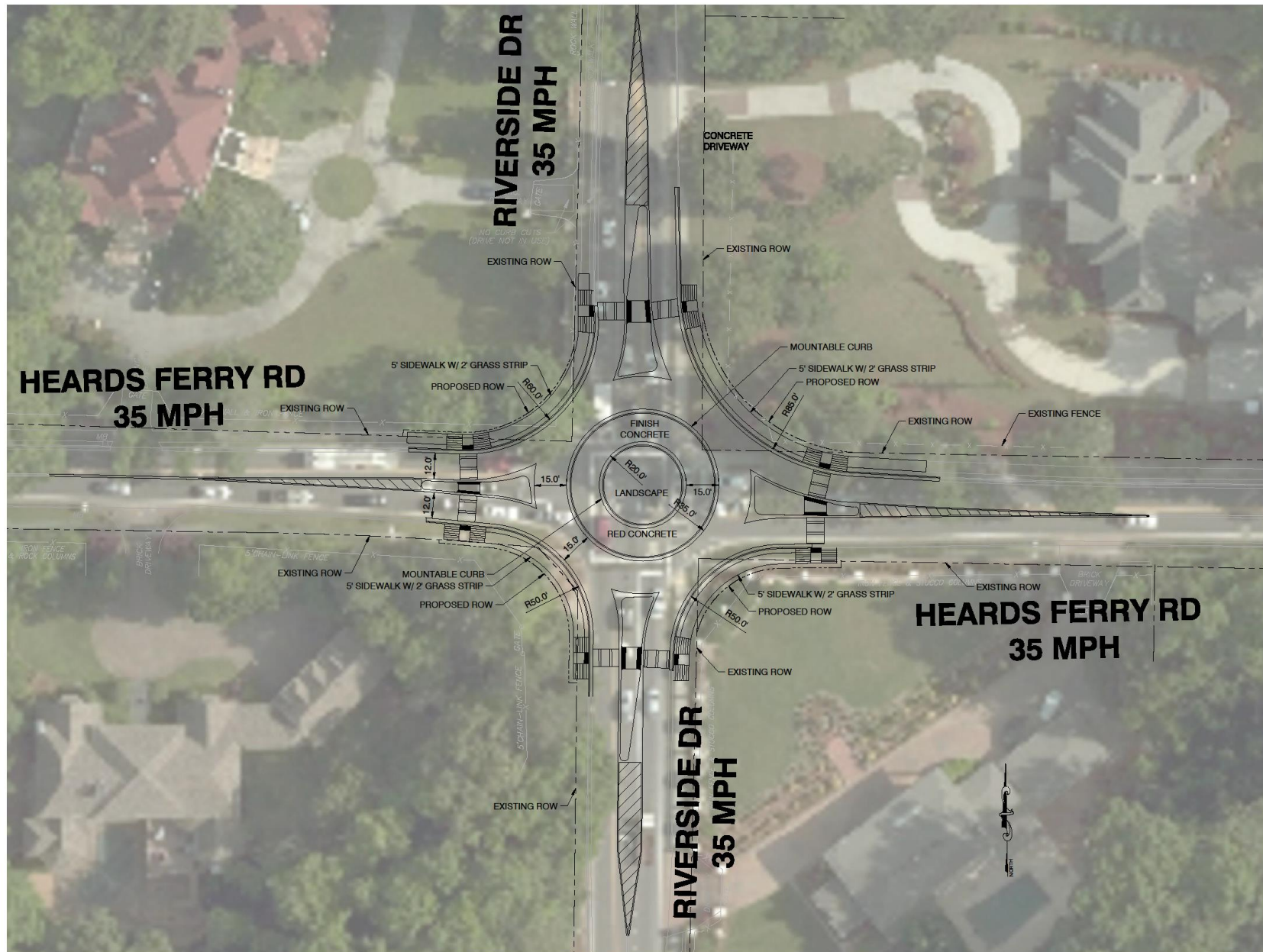
Estimated Easements: 11,400 SF (\$456,000)*
Estimated Right-of-Way: 1,100 SF (\$88,000)*

*Assumes \$40/SF (Easement); \$80/SF (Right-of-Way)

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Concept Plan with Single Lane Roundabout



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Measure of Effectiveness (Roundabout)

Level-of-Service (Delay in Seconds)

Future (2020)

Intersection	AM Peak	MID Peak	PM Peak
Riverside Drive/Heards Ferry Road (Overall)	F (206)	F (145)	F (191)
-Eastbound Approach	F (161)	F (67)	C (21)
-Westbound Approach	E (41)	F (141)	F (215)
-Northbound Approach	F (90)	F (217)	F (287)
-Southbound Approach	F (366)	F (107)	F (115)

AM Peak Hour: 7:30 am - 8:30 am

MID Peak Hour: 3:00 pm - 4:00 pm

PM Peak Hour: 4:00 pm - 5:00 pm

Measure of Effectiveness (Roundabout) Queue Lengths (feet) Future (2020)

Intersection	Available Storage	AM Peak	MID Peak	PM Peak
Riverside Drive/Heards Ferry Road				
-Eastbound Approach	-	157	204	101
-Westbound Approach	-	174	190	154
-Northbound Approach	-	976	2,540	2,479
-Southbound Approach	-	1,936	1,859	1,201

Roundabout Concept Estimated Costs

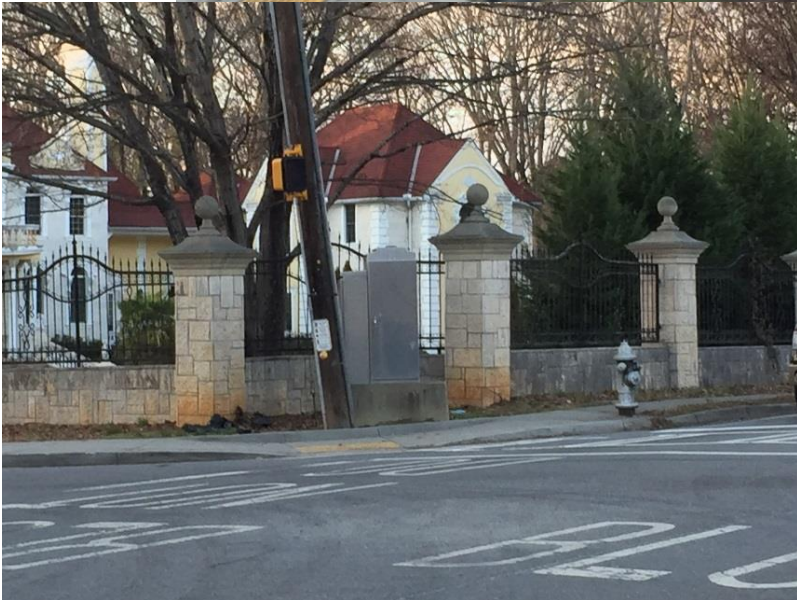
DEMOLITION	\$7,271
EROSION CONTROL	\$29,972
STORM DRAIN SYSTEM	\$0
CURB, BASE & PAVING	\$200,672
<u>GENERAL</u>	<u>\$155,583</u>
TOTAL:	\$393,498*

* Excludes property acquisition, utility relocations and cost-to-cures

Estimated Easements: 3,100 SF (\$124,000)*
Estimated Right-of-Way: 3,050 SF (\$244,000)*

*Assumes \$40/SF (Easement); \$80/SF (Right-of-Way)

Photos



NORTHWEST CORNER



SOUTHEAST CORNER

Comparison of Signal and Roundabout Level of Service (Delay in Seconds) Future (2020)

Intersection	AM Peak		MID Peak		PM Peak	
	Signal	RA*	Signal	RA*	Signal	RA*
Riverside Drive/Heards Ferry Road (Overall)	F (96)	F (206)	E (60)	F (145)	E (72)	F (191)
-Eastbound Approach	F (151)	F (161)	E (76)	F (67)	F (105)	C (21)
-Westbound Approach	F (160)	E (41)	F (105)	F (141)	F (145)	F (215)
-Northbound Approach	E (61)	F (90)	D (53)	F (217)	E (67)	F (287)
-Southbound Approach	E (74)	F (366)	D (39)	F (107)	D (39)	F (115)

* RA - Roundabout

Comparison of Signal and Roundabout Queue Lengths (feet) Future (2020)

Intersection	AM Peak			MID Peak			PM Peak		
	Signal	RA*	Diff.	Signal	RA*	Diff.	Signal	RA*	Diff.
Riverside Drive at Heards Ferry Rd									
Eastbound	1,147	157	-990	316	204	-112	205	101	-104
Westbound	884	174	-710	629	190	-439	1,194	154	-1,040
Northbound	368	976	+608	833	2,541	+1,708	2,584	2,479	-105
Southbound	1,971	1,936	-35	646	1,859	+1,213	738	1,201	+463

Results/Conclusions

- The Level of Service for both options worsen to “E” or “F”
- Impact of Queue backups into I-285 interchange should be considered in the selected improvement option
- The roundabout option gives shorter queues on Heards Ferry Road but longer queues on Riverside Drive, particularly southbound in the PM peak hour
- With the roundabout option the queues on Riverside Drive extend beyond approximately 2,000 or more feet in both directions
- The traffic signal option yields shorter queues on Riverside Drive and longer on Heards Ferry Road, but this can be changed with signal timing program
- None of the above two options provide significant relief to congestion at this intersection
- An alternative option that increases capacity in the north/south direction may be considered to relieve congestion.

Concept Plan with Two-Lane Roundabout and Two Approach Lanes Between I-285 and River Valley Road



Riverside Dr at Heards Ferry Rd
 Roundabout Concept

PREPARED FOR
 City of Sandy Springs, GA

4 Lane Concept

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DATE:	1-23-2017
REVISIONS	
NO.	DATE
DRAWN BY:	WMH
CHECKED BY:	DMM
PROJECT NO.	16-145
PLAN SET:	Concept
SHEET	T3

